

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

Applicant : Spillman, William B., Jr. et al.  
International Application No.: PCT/US2003/036680  
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Priority Date : 18 November 2002  
For : System, Device, and Method for Detecting  
Perturbations

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**SUPPLEMENTAL REPLY**  
**UNDER ARTICLE 34 AND RULE 66**

In accord with PCT Article 34 and Rule 66, Applicant respectfully submits the following amendments and statements.

**AMENDMENTS**

Please substitute the enclosed replacement sheets 29-38 for sheets 29-37 currently on file. Replacement sheets 29-38 amend independent claims 1, 58, 59, and 80 to recite a “pixelated photodetector” and “a portion of the plurality of detected variables automatically interpreted as corresponding to higher-order-to-lower-order-coupled light when the portion of the plurality of detected variables correspond to light incident only within a circular area of the photodetector defined by an inner radius of an annulus created by higher order modes of light propagated along the” “optical fiber” or “fiber optic sensor”.

**STATEMENTS**

The Examiner is respectfully thanked for the thoughtful consideration provided to this application. Reconsideration of this application is respectfully requested in light of the requested amendments and the following remarks.

Claims 1, 58 59, and 80 are amended without prejudice or disclaimer to expedite the issuance (in the National stage) of claims of particular current licensing interest. All of the claims now recite a “pixelated photodetector” and “a portion of the plurality of detected variables automatically interpreted as corresponding to higher-order-to-lower-order-coupled light when the portion of the plurality of detected variables correspond to light incident only within a circular area of the photodetector defined by an inner radius of an annulus created by higher order modes of light propagated along the” “optical fiber” or “fiber optic sensor”. Descriptive support for the claim amendments can be found throughout the application, including at page 14, lines 2-15.

Claims 1-80 are now pending. Claims 1, 58 59, and 80 are the independent claims.

**Claims 1-7, 10-18, 23-30, 35-55, 58-72, and 74-80**

In the Written Opinion mailed on 1 March 2005, claims 1-7, 10-18, 23-30, 35-55, 58-72, and 74-80 were cited as failing to meet the criteria under PCT Article 33(2) due to alleged defeat of novelty by U.S. Patent 5,436,444 (Rawson). This contention is respectfully traversed.

Each of independent claims 1, 58, 59, and 80 recite a “pixelated photodetector” and “a portion of the plurality of detected variables automatically interpreted as corresponding to higher-order-to-lower-order-coupled light when the portion of the plurality of detected variables correspond to light incident only within a circular area of the photodetector defined by an inner radius of an annulus created by higher order modes of light propagated along the” “optical fiber” or “fiber optic sensor”. Rawson fails to explicitly or inherently disclose the claimed subject matter for at least the following 4 reasons:

1. Rawson does not disclose explicitly or inherently the claimed “**pixelated** photodetector”. Instead, Rawson allegedly recites a “two-segment split photodetector” (col. 4, line 27), which is not a “**pixelated** photodetector”.

2. Rawson does not explicitly or inherently the claimed “**automatically interpreted**” “plurality of detected variables”. Instead, Rawson allegedly states that “**no analysis is made** of the modal noise signal for any purpose”. Col. 4, lines 36-38.

3. Rawson does not disclose explicitly or inherently the claimed “portion of the plurality of detected variables automatically interpreted as corresponding to **higher-order-to-lower-order-coupled light** when the portion of the plurality of detected variables correspond to light incident only within a circular area of the photodetector defined by an inner radius of an annulus created by higher order modes of light propagated along the” “optical fiber” or “fiber optic sensor”. Instead, Rawson seems only concerned with a “detection system used to detect the **optical speckle pattern**” (col. 7, lines 7-8), rather than the claimed “higher-order-to-lower-order-coupled light”.

4. Rawson does not disclose explicitly or inherently “**light incident only** within a circular area of the photodetector defined by an inner radius of an annulus created by higher order modes of light propagated along the” “optical fiber” or “fiber optic sensor”. Instead, Rawson allegedly recites the collection of “**all of the modal light** from the output of the fiber” (col. 7, lines 30-32).

For at least these 4 reasons, Rawson does not defeat the novelty of independent claims 1, 58, 59, and 80. Accordingly, it is respectfully submitted that the contention regarding these claims, and those claims depending therefrom, is unsupported and should be withdrawn.